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INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference <b>01019/03PCT</b>	<b>FOR FURTHER ACTION</b> See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416)	
International application No. <b>PCT/US03/17840</b>	International filing date (day/month/year) <b>06 June 2003 (06.06.2003)</b>	Priority date (day/month/year) <b>06 June 2002 (06.06.2002)</b>
International Patent Classification (IPC) or national classification and IPC <b>IPC(7): E21B 43/11, 17/10, 43/08, 43/16 and US Cl.: 166/308.1, 305.1, 100</b>		
Applicant <b>SAND CONTROL, INC.</b>		

1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.

2. This REPORT consists of a total of 6 sheets, including this cover sheet.

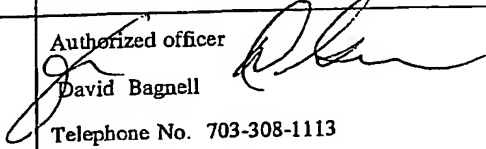
☐ This report is also accompanied by ANNEXES, i.e., sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the

PCT).

These annexes consist of a total of 1 sheets.

3. This report contains indications relating to the following items:

- I ☒ Basis of the report
- II ☐ Priority
- III ☐ Non-establishment of report with regard to novelty, inventive step and industrial applicability
- IV ☐ Lack of unity of invention
- V ☒ Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- VI ☐ Certain documents cited
- VII ☒ Certain defects in the international application
- VIII ☐ Certain observations on the international application

Date of submission of the demand <b>03 December 2003 (03.12.2003)</b>	Date of completion of this report <b>26 September 2004 (26.09.2004)</b>
Name and mailing address of the IPEA/US Mail Stop PCT, Attn: IPEA/US Commissioner for Patents P.O. Box 1450 Alexandria, Virginia 22313-1450 Facsimile No. (703) 305-3230	Authorized officer  David Bagnell Telephone No. 703-308-1113

# INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.

PCT/US03/17840

## I. Basis of the report

1. With regard to the elements of the international application:\*

☒ the international application as originally filed.

☒ the description:

pages 1-10 as originally filed

pages NONE, filed with the demand

pages NONE, filed with the letter of \_\_\_\_\_.

☒ the claims:

pages 11-13 as originally filed

pages NONE, as amended (together with any statement) under Article 19

pages NONE, filed with the demand

pages NONE, filed with the letter of \_\_\_\_\_.

☒ the drawings:

pages 1-7 as originally filed

pages NONE, filed with the demand

pages NONE, filed with the letter of \_\_\_\_\_.

☐ the sequence listing part of the description:

pages NONE, as originally filed

pages NONE, filed with the demand

pages NONE, filed with the letter of \_\_\_\_\_.

2. With regard to the language, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language \_\_\_\_\_ which is:

☐ the language of a translation furnished for the purposes of international search (under Rule 23.1(b)).

☐ the language of publication of the international application (under Rule 48.3(b)).

☐ the language of the translation furnished for the purposes of international preliminary examination (under Rules 55.2 and/or 55.3).

3. With regard to any nucleotide and/or amino acid sequence disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

☐ contained in the international application in printed form.

☐ filed together with the international application in computer readable form.

☐ furnished subsequently to this Authority in written form.

☐ furnished subsequently to this Authority in computer readable form.

☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.

☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. ☒ The amendments have resulted in the cancellation of:

☒ the description, pages None

☒ the claims, Nos. None

☒ the drawings, sheets/fig None

5. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).\*\*

\* Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rules 70.16 and 70.17).

\*\* Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.

## INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.  
PCT/US03/17840**V. Reasoned statement under Rule 66.2(a)(ii) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement****1. STATEMENT**

Novelty (N)	Claims <u>2 and 8-14</u>	YES
	Claims <u>1, 3-7, and 15-19</u>	NO
Inventive Step (IS)	Claims <u>NONE</u>	YES
	Claims <u>1-19</u>	NO
Industrial Applicability (IA)	Claims <u>1-19</u>	YES
	Claims <u>NONE</u>	NO

**2. CITATIONS AND EXPLANATIONS**

Please See Continuation Sheet

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**VII. Certain defects in the international application**

The following defects in the form or contents of the international application have been noted:

Claims 4, 11, and 16 are objected to under PCT Rule 66.2(a)(iii) as containing the following defect(s) in the form or contents thereof: the recitation of "is position s adjacent a site" in each claim should most likely be --is positioned adjacent a site--.

## INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.  
PCT/US03/17840**Supplemental Box**

(To be used when the space in any of the preceding boxes is not sufficient)

Claims 1, 3-7 and 15-19 lack novelty under PCT Article 33(2) as being anticipated by Johnson.

Regarding claims 1 and 15, Johnson discloses a method and system of injection well construction and completion comprising drilling a borehole through an injection zone of a formation (see Fig. 1); running a casing (20, 200) into the borehole, wherein the casing includes an extendable assembly (26, 212, 214, 216) comprising a fixed portion and a movable portion having a filter media (135) at its distal end so that the assembly is positioned adjacent a site in the injection zone to form a conduit once extended (see Fig. 4); providing well completion tubing and equipment (see Fig. 1); and injecting fluids into the well through the conduit (see col. 13, line 45 through col. 14, line 55).

Regarding claim 3, an injection pressure exceeds a fracture pressure of the injection zone (see col. 13, line 66 through col. 14, line 8).

Regarding claims 4-7 and 16-19, a plurality of assemblies (26, 212, 214, 216) are included so that each extendable assembly is positioned adjacent a site in the injection zone (see Figs. 5 and 6).

Claim 2 lacks an inventive step under PCT Article 33(3) as being obvious over Johnson in view of Moran et al. Johnson teaches the method of injection well construction and completion that comprises extendable assemblies as applied to claim 1 above. It is not taught that the casing is cemented in place after the assemblies are extended but before the injecting step.

Moran et al teach a casing string with extendable assemblies similar to that of Johnson. Moran et al further teach that the casing is cemented in place after the assemblies are extended but before any other well completion step is performed (see col. 3, lines 38-65). At the time the invention was made, it would have been obvious to one of ordinary skill in the art to make such a combination because the casing would be centralized within the borehole prior to cementing took place, or any other completion step was preformed, as taught by Moran et al.

Claims 8 and 10-14 lack an inventive step under PCT Article 33(3) as being obvious over Johnson in view of Parlar et al. Johnson teaches a method of injection well construction and completion comprising drilling a borehole through an injection zone of a formation (see Fig. 1); running a casing (20, 200) into the borehole, wherein the casing includes an extendable assembly (26, 212, 214, 216) comprising a fixed portion and a movable portion having a filter media (135) at its distal end so that the assembly is positioned adjacent a site in the injection zone to form a conduit once extended (see Fig. 4); and injecting fluids into the well through the conduit (see col. 13, line 45 through col. 14, line 55). It is not taught that the conventional drilling fluid used to drill the borehole is displaced with a "Drill-In Fluid".

Parlar et al teach a method of well construction and completion similar to that of Johnson. Parlar et al further teach the step of displacing a conventional drilling fluid with a drill-in fluid (see col. 3, line 65 through col. 4, line 7). At the time the invention was made, it would have been obvious to one of ordinary skill in the art to make such a combination because the method would provide reduced cost and improved fluid management practices, as taught by Parlar et al in column 4, lines 15-20.

Regarding claim 10, the combination applied to claim 8 above teaches an injection pressure exceeds a fracture pressure of the injection zone (see col. 13, line 66 through col. 14, line 8 of Johnson).

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**Supplemental Box**

(To be used when the space in any of the preceding boxes is not sufficient)

Regarding claims 11-14, the combination applied to claim 8 above teaches a plurality of assemblies (26, 212, 214, 216) are included so that each extendable assembly is positioned adjacent a site in the injection zone (see Figs. 5 and 6 of Johnson).

Claim 9 lacks an inventive step under PCT Article 33(3) as being obvious over the prior art as applied in the immediately preceding paragraph and further in view of Moran et al. The combination applied to claim 8 above teaches a method of injection well construction and completion that comprises extendable assemblies. It is not taught that the casing is cemented in place after the assemblies are extended but before the injecting step.

Moran et al teach a casing string with extendable assemblies similar to that of the combination. Moran et al further teach that the casing is cemented in place after the assemblies are extended but before any other well completion step is performed (see col. 3, lines 38-65). At the time the invention was made, it would have been obvious to one of ordinary skill in the art to make such a combination because the casing would be centralized within the borehole prior to cementing took place, or any other completion step was performed, as taught by Moran et al.

Claims 1-19 meet the criteria set out in PCT Article 33(4), and thus meet industrial applicability because the subject matter claimed can be made or used in industry.